KAWEAH BASIN
WATER QUALITY ASSOCIATION

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Patrick Pulupa, Executive Officer
Central Valley Regional Water Quality Control Board
1685 E Street
Fresno, CA 93706-2007

RE: Revised Pesticide Evaluation Protocol Proposal – 2018 Update

Dear Mr. Pulupa:

The Kaweah Basin Water Quality Association (**KBWQA**) is submitting a "Pesticide Evaluation Protocol Proposal – 2018 Update" (**Proposal**) in response to monitoring requirements described in the Monitoring and Reporting Program required by Waste Discharge Requirements, General Order for Growers in the Tulare Lake Basin that are Members of a Third-Party Group, Order No. R5-2013-0120 (**General Order**). In November of 2016 the Executive Officer issued a Pesticides Evaluation Protocol (**Protocol**) to be used by coalition groups to determine appropriate pesticides to monitor under the Monitoring and Reporting Program for surface water. This proposal utilizes pesticide use data from 2014, 2015 and 2016.

As described in the Protocol, coalitions must annually update and submit a list of pesticides to be monitored using the most recent three years of pesticide use data. Pesticide use data are required to be evaluated to create monitoring prioritization based on aquatic life and human health reference values, as well as evaluating existing monitoring data, environmental fate factors, and availability of analytical methods. The resulting list is intended to be watershed specific and updated annually with the submittal of the Surface Water Monitoring Plan Update. Monitoring Plan Updates are due 60 days prior to the start of the coalition's monitoring year. The KBWQA monitors surface water using a water year which begins on October 1st and ends September 30th, therefore the Monitoring Plan Updates and Proposals are due annually on August 1. Described below is the process by which the KBWQA utilized the Protocol to determine pesticides to monitor in the 2019 water year.

Evaluation Process

The steps outlined in the Protocol were followed to analyze relevant pesticide use records within the KBWQA boundary area. Pesticide application data were obtained through the Department of Pesticide Regulation's (DPR's) California Pesticide Information Portal (CalPIP) for Tulare County for the years 2014 through 2016. Only pesticide use data in KBWQA surface water monitoring areas, the Lewis Creek, Upper Cameron Creek, and St. John's River sub-watersheds, were selected from available CalPIP data. Pesticide application records for the watersheds were filtered to only chemicals included in the Executive Officer List of Pesticides for Consideration (Pesticide Evaluation Protocol, Attachment A).

The application records defined the total cumulative use for each month and annual use averaged by month in pounds of chemical, as well as the quantity of degradates and impurities resulting from application. These application results were grouped and ranked relative to aquatic life reference values and the percent annual application per month. Available surface water monitoring data were queried for the pesticides applied to determine if detections greater than 10% of the reference value were found in

the watershed. Environmental fate of identified pesticides was reviewed to define those unlikely to be found in the water column. Site and chemical specific considerations were reviewed, along with the availability of chemical analysis methods to determine pesticides which may not require monitoring.

The monitoring proposal includes and prioritizes pesticides relevant to each defined step in the Protocol. The list of proposed pesticides to monitor is defined in Tables 1, 2, 3 and illustrates months for which applications were significant relative to aquatic life reference values, and therefore monitoring is anticipated to occur. The attached workbooks contain worksheets detailing monitoring decisions for each evaluated pesticide and what criteria were applied for each exemption.

As the Protocol was completed several decisions were made to determine exemptions, which are clarified below:

- CalPIP data was clipped to surface water monitoring areas (using GIS) to select sections within watershed or sub-watershed boundaries. Watersheds were determined using topographical information to delineate lines of highest elevation. For areas with minimal elevation variance, other factors such as physical barriers and intersecting waterways (canals or ditches) were used to determine the area of influence within the KBWQA boundary (see map, Figure 1).
- Given arid conditions, collected monitoring data is limited in the KBWQA area. The Protocol recommends a minimum of 20 samples, collected within 5 years, for “sufficient quantity of data” not exceeding 10% of the aquatic life reference value in order to be excluded from the ranking list. However, the Protocol also allows for coalition recommended criteria. Therefore, due to limited precipitation events and the ephemeral nature of monitored waterbodies, the KBWQA requests to extend the allowable monitoring period for collected data from 5 years to 10 years.

The monitoring proposal includes and prioritizes pesticides relevant to each defined step of the Protocol. Figure 1 identifies the sub-watersheds monitored by the KBWQA. Sub-watersheds are monitored for Assessment parameters (including pesticides) on a three-year rotational basis. For the 2019 water year the KBWQA will monitor the Lewis Creek, Upper Cameron Creek, and St. John’s River sub-watersheds for assessment parameters. Tables 1, 2, 3 details the proposed list of pesticides to be monitored in the 2019 Water Year. Upon approval of this proposal, the KBWQA will begin implementation of the proposed monitoring. The KBWQA intends to continue to work with RWQCB staff to determine how to appropriately incorporate previously collected surface water monitoring data to establish pesticides to be monitored and will implement the approved proposal in the interim period.

Attachment 1: Monitoring Proposal

Table 1. Lewis Creek Monitoring Proposal

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Grand Total
Acetamiprid										X			1
Copper	X	X	X	X		X	X	X	X	X	X	X	11
Imidacloprid				X	X	X	X	X	X				6
Pendimethalin	X	X	X	X							X	X	6
Pyraclostrobin				X									1
Pyridaben		X	X	X	X								4
Bifenthrin			X	X	X	X	X	X	X		X		8
Carbaryl					X	X	X	X	X	X			6
Chlorpyrifos	X	X	X	X	X	X	X	X	X	X	X	X	12
Clothianidin							X	X	X	X			4
Cyfluthrin	X	X	X	X	X	X	X	X	X	X	X	X	12
Cypermethrin	X	X	X	X	X	X	X	X	X	X	X	X	12
Dimethoate		X		X	X	X	X	X	X				7
Lambda-Cyhalothrin	X	X	X	X	X	X	X	X					8
Malathion		X		X	X	X	X	X	X				7
Oxyfluorfen	X	X	X			X	X			X	X	X	8
Paraquat Dichloride	X		X	X	X	X	X	X	X		X	X	10
Permethrin				X	X			X	X				4
Esfenvalerate	X	X		X	X	X	X						6
Flumioxazin	X	X	X									X	4
Oryzalin		X											1
Simazine	X	X	X							X	X	X	6
Fenpropathrin	X			X	X	X	X	X	X				7

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Grand Total
Diuron	X	X	X							X	X	X	6
Chloropicrin		X					X					X	3
Methiocarb							X						1
Diazinon		X											1
Grand Total:	**13**	**17**	**13**	**16**	**14**	**14**	**17**	**14**	**13**	**10**	**10**	**11**	**162**

Table 2. Upper Cameron Creek Monitoring Proposal

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Grand Total
Copper	X		X	X						X	X	X	6
Pendimethalin					X								1
Pyridaben					X								1
Bifenthrin				X		X	X		X				4
Chlorpyrifos			X		X	X	X	X	X				6
Cyfluthrin	X	X		X	X	X							5
Cypermethrin		X	X		X	X			X			X	6
Lambda-Cyhalothrin			X	X	X	X							4
Malathion				X	X		X		X				4
Oxyfluorfen	X	X								X	X		4
Paraquat Dichloride								X	X				2
Esfenvalerate						X							1
Fenpropathrin				X	X								2
Grand Total:	**3**	**3**	**4**	**6**	**8**	**6**	**3**	**2**	**5**	**2**	**2**	**2**	**46**

Table 3. St. John's River Monitoring Proposal

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Grand Total
Copper	X	X	X	X	X	X	X	X	X	X	X	X	12
Imidacloprid					X	X	X	X	X				5
Pendimethalin	X	X									X	X	4
Pyridaben		X	X	X						X			4
Bifenthrin	X	X	X	X	X	X	X	X	X	X	X	X	12
Carbaryl					X	X	X	X					4
Chlorpyrifos		X	X	X	X	X	X	X	X	X	X	X	11
Clothianidin								X		X			2
Cyfluthrin	X	X	X	X	X	X	X	X	X	X	X	X	12
Cypermethrin	X	X	X	X	X	X		X	X	X	X	X	11
Dichlorvos			X										1
Dimethoate					X			X					2
Lambda-Cyhalothrin	X	X		X			X	X	X	X			7
Malathion	X	X	X	X	X	X	X	X	X	X	X	X	12
Oxyfluorfen	X	X	X		X	X	X	X	X	X	X	X	11
Paraquat Dichloride			X	X	X	X	X	X	X	X			8
Permethrin						X							1
Trifluralin						X							1
Esfenvalerate	X	X			X	X	X						5
Flumioxazin											X		1
Simazine		X									X	X	3
Fenpropathrin			X	X	X				X				4
Diuron		X									X	X	3

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Grand Total
Methiocarb			X	X	X								3
Ethalfluralin						X							1
Prodiamine						X							1
Grand Total	**9**	**13**	**12**	**11**	**14**	**15**	**11**	**13**	**11**	**11**	**11**	**10**	**141**

Figure 1. Monitoring Site Map of 2019 Assessment Sites